

COMPARISON OF ACADEMIC ACHIEVEMENT IN VIRGINIA AND IN LEADING INDUSTRIALIZED NATIONS

STUDY PLAN (YEAR ONE)

Study Background

During the 2011 General Assembly Session, Senator Yvonne B. Miller introduced Senate Joint Resolution 320, which directed the Commission on Youth to study how Virginia school children compare academically to students in other countries. The resolution directed the Commission to:

- (i) compare the academic achievement of Virginia's students with that of students internationally for the past five years, especially in reading, mathematics, and science;
- (ii) identify features in the education systems of other countries that rank higher than the United States which may contribute to the academic success of their students;
- (iii) determine whether any of these features may be adapted for use in Virginia and the cost of implementation;
- (iv) determine whether and what changes in Virginia's public education system are warranted in light of findings from the comparison of the academic achievement of students in Virginia with students internationally; and
- (v) consider other matters related to the objectives of this resolution and recommend feasible and appropriate options and alternatives.

The Senate reported the resolution; however, members of the House Committee on Rules did not report the resolution.

Identified Issues

- Educators, parents, community leaders and policymakers at the local, state, and federal level have focused attention on the need to address the academic achievement gap illustrated by grades, standardized-test scores, course selection, dropout rates, and college-completion rates.
- This finding is considered especially relevant, as today's high school graduates enter a global job market where highly skilled workers are in increasing demand and a number of countries have made significant improvements.
- U.S. industry, science, and technological innovation is being overtaken by competitors throughout the world, and U.S. employers have detailed specifically and candidly the problems with the American education system;
 - In a major survey conducted in 2005 by the National Alliance of Manufacturing, when companies were asked whether K-12 schools were doing a good job preparing students for the workplace, 84 percent of the 800 participating companies indicated "no."
 - When controlling for industry segment, the Aerospace and Defense segment reported "no" 93 percent of the time.
 - The top three most frequently-cited deficiencies of the education system were: basic employability skills, math and science, and reading and comprehension.

- This achievement gap challenges the Commonwealth's ability to maintain a competitive advantage among industrialized nations. On international assessments of academic proficiency, U.S. students' performance is below other countries.
 - In the Trends in International Mathematics and Science Study (TIMSS) last conducted in 2007, middle-school students in the United States ranked 11th out of 48 participating countries.
 - In the 2009 Programme for International Student Assessment (PISA), secondary school students' in the United States ranked 30th in Math, 23rd in Science, and 17th in Reading out of the 34-member Organisation for Economic Co-operation and Development (OECD) countries.
- In follow up studies, researchers assert that international comparisons are problematic because the impact of other factors, such as culture and context, are difficult to measure. Variables such as curricula, amount and rate of preschool education, age of school enrollment, class sizes, discipline, quantity of education, attendance at additional schools, early tracking, and the use of central exams and tests which also impact student outcomes not accounted for by these studies.
- Other nations have started benchmarking their policies and practices with the world's top performers. A compilation of the attributes of leading industrialized nations' educational systems would be useful in order to gather best-practices to help Virginia keep up globally.

Study Activities

Year One

1. Compile a "snapshot" of Virginia's educational attributes/statistics compared to other states.
 - a. Determine secondary data sources
 - i. The National Assessment of Educational Progress (NAEP) of U.S. students
 - ii. The Institute for Education Sciences' *Projections of Education Statistics*
 - iii. U.S Department of Education' Consolidated State Performance Report (CSPR)
 - b. Select metrics for inclusion in this comparison
 - i. Science Technology Engineering and Math (STEM)
 - ii. No Child Left Behind (NCLB) Accountability Scores
 - iii. Graduation Rates
 - iv. Adequate Yearly Progress Data/Test Scores
2. Compile country-by-country "snapshot" of other countries' educational systems' attributes and best-practices.
 - a. Determine secondary data sources
 - i. Organisation for Economic Co-operation and Development (OECD)
 - ii. American Institute for Research
 - iii. Harvard's Program on Education Policy
 - iv. Education Commission of the States
 - v. Trends in International Mathematics and Science Study (TIMSS)
 - vi. 2009 Programme for International Student Assessment (PISA)
 - vii. American Institutes for Research
 - viii. National Center for Education Statistics
 - b. Select countries to be included
 - i. Group of Eight (G-8)
 - ii. OECD's Programme for International Student Assessment (PISA) survey participants
 - c. Select elements to include for comparison
 - i. Student data

1. Age upon school enrollment
 2. Age upon graduation
 3. Economic status
 4. Gender
 - ii. System attributes
 1. Early education/Pre-K
 2. Curriculums
 3. Student/teacher ratio
 4. Per pupil expenditures
 5. Funding
 6. Time spent learning
 7. Teacher selection/preparation
 8. Professional development
 9. Student demographic
 10. Science Technology Engineering and Math (STEM)
 11. Length of school year
 12. Standardized tests
 - iii. Educational outputs
 1. Achievement scores
 2. Proficiency scores on standardized assessments
- d. Synthesize findings of literature review and formulate recommendations.
- e. Solicit feedback to recommendations from stakeholders and impacted agencies.
- f. Refine findings and recommendations.
- g. Present findings and recommendations to the Commission on Youth.

Study Activities

Year Two

1. Review data gathered during the first year.
 - a. Select a sample of high performing countries based on educational outcomes, test scores, and ability to apply findings to the United States/Virginia.
 - b. Select specific international outcomes/data.
 - c. Select attributes based on clarity and portability of outcomes.
2. Convene Workgroup to assist in process
 - a. Invite a representative from impacted groups

Secretary of Education
Superintendent of Public Instruction
Representatives from Higher Education/Academia
Virginia Department of Education
Virginia School Boards Association
Virginia Association of School Superintendents
Virginia Association of Secondary School Principals
Alternative Education Representatives
Court Service Unit Representatives
Business Representatives
Industry & Technology Representatives

Board of Education
Virginia PTA
Virginia Manufacturers Association
Career and Technical Education Officials
Virginia Education Association
Virginia Association of Elementary School Principals
Governor's Academies/STEM
Educators/Guidance Counselors
State Council of Higher Education
Virginia Community College System
Private School Representatives

3. Identify international/national best practices which can be adopted in Virginia.
 - a. Review other states'/nations' research and studies
 - b. Review findings from Virginia's Governor's Commission on Higher Education Reform, Innovation and Investment
 - c. STEM initiatives
 - d. Practices from schools that excel
 - e. Innovative methods used to measure students' progress

4. Develop consensus.
5. Develop recommendations.
6. Synthesize findings of literature and workgroup recommendations.
7. Solicit feedback to recommendations from constituents and DOE/Board of Education.
8. Refine recommendations.
9. Present recommendations to Commission on Youth.
10. Prepare final report.